Sleep EEG Classification Using Fuzzy Logic

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***Abstract*—the computerized detection of multi stage system of EEG signals using fuzzy logic has been developed and tested on prerecorded data of the EEG of rats.The multistage detection system consists of three major stages: Awake, SWS (Slow wave sleep), REM (Rapid eye movement) which has been recorded and can be detected by the fuzzy classification and fuzzy rule base. The proposed work approaches to identify thestage of 3- channel signal on the basis of frequency distribution of EEG, standard deviation of EOG and EMG, variance of EOG and EMG. Based on feature extracted data, fuzzy logic rule base modelwas evaluated accurately in terms of 3 stages (Awake, SWS, and REM) and the result confirmed that the proposed model has potential in classifying the EEG signals**

***Index Terms*— EEG, Awake, SWS, REM, Fuzzy Logic**